

Photoelectrics, Fibre Optic Sensor

Glass Fibres

Type PD 60 CNV 20 BP .. T

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- Range: Fibre dependent
 - Diffuse Reflective typ. 80 mm
 - Through Beam typ. 200 mm
- Teach-In (keyboard or remote setup)
- Microprocessor controlled and EEPROM parameter storage
- Operational voltage 10 - 30 V DC
- Output 100 mA, NPN and PNP
- Light or dark switching selectable
- IP65 protection
- Timer: ON-delay or OFF-delay



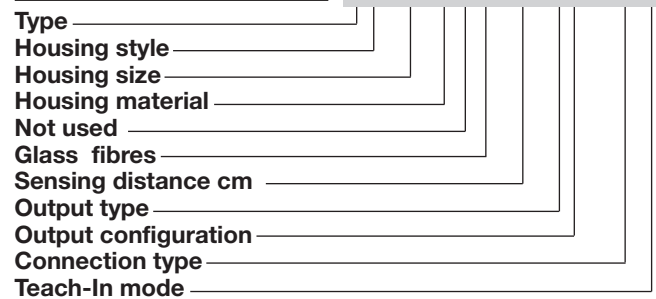
Product Description

The PD60CNV20BP.. T is a fibre optic amplifier made specific for glass fibres with temperature up to 250° C. The sensor is microprocessor based and has a build in programmable functions such as Teach-In function for fast sensing distance optimising, NO or NC output, Time delay ON or OFF The sensor output is build as a Push-pull output that performs both a NPN and PNP output which are fully

protected against short-circuit, transients and wrong polarity. The sensor is build in a strong 13 x 30 x 60 mm polycarbonate housing for DIN-rail mounting. The sensors are suitable for applications that require little space and high accuracy such as: Small part detection, tight locations, checking parts, counting, precise part positioning, material handling and assembly and robotics

Ordering Key

PD 60 CNV 20 BP M5 T



Type Selection

Housing W x H x D	Range S _n (Fibre dependent)	Ordering no. NPN and PNP cable Make or break switching	Ordering no. NPN and PNP plug Make or break switching
13 x 30 x 60 mm	80 mm diffuse mode 200 mm through beam mode	PD 60 CNV 20 BP T	PD 60 CNV 20 BP M5 T

Specifications

Rated operating distance (S_n) Diffuse mode Through beam mode	See optical fibre table Up to 80 mm Up to 200 mm	Voltage drop (U_d) I _L = 100 mA I _L = 10 mA	≤ 2 VDC ≤ 1 VDC
Sensitivity Teach-In Manual fine tune	Automatic threshold set-up Sensitivity increase or sensitivity decrease	Remote input ON OFF	≤ 1.4 VDC ≥ 3.0 VDC
Temperature drift	< 0,4%/C°	Timer Range programmable First step Following step	0 to 5 s in 11 steps 40 ms 500 ms
Hysteresis (H) Differential travel	≤ 5%	Protection	Short-circuit, reverse polarity, transients
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Light source	GaAlAs, LED 660 nm
Ripple (U_{rpp})	≤ 10%	Light type	Red modulated
Output current Continuous (I _a) Short-time (I)	100 mA 100 mA	Ambient light Incandescent light Sunlight	10'000 Lux 20'000 Lux
No load supply current (I_o)	≤ 40 mA		



Specifications (cont.)

Operating frequency	1 KHz	Temperature	
Response time		Operating	0° to +60°C (32° to +140°F)
OFF-ON (t_{ON})	$\leq 500 \mu\text{s}$	Storage	-20° to +80°C (-4° to +176°F)
ON-OFF (t_{OFF})	$\leq 500 \mu\text{s}$	Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC60068-2-6)
Power ON delay (t_v)	$\leq 300 \text{ mS}$	Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)
Output function	Available (Push-pull output) Programming by keyboard	Rated insulation voltage	50 VAC (rms)
NPN and PNP Make or break		Housing material	
Indication function	Target detected, timer ON, sensitivity, alignment, low signal, keyboard lock, short circuit	Body	Polycarbonate
Environment		Connection	
Installation category	I (IEC 60664/60664A;60947-1)	Cable	PVC, grey, 2 m, 4 x 0,25 mm ²
Pollution degree	3 (IEC 60664/60664A;60947-1)	Plug	NPB, M8 x 1
Degree of protection	IP 65 (IEC 60529; 60947-1)	Cables for plug (M5)	CONG5A-series
		Weight	24 g
		Approvals	cUL
		CE-marking	Yes

Operation Diagram

t_v = Power ON delay

Power supply

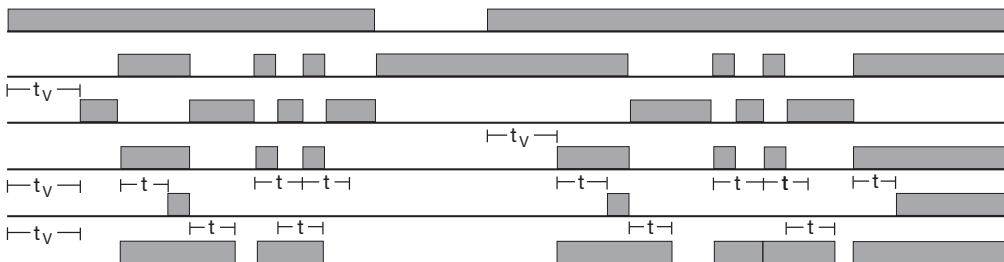
Target present

Break (NC) Output ON

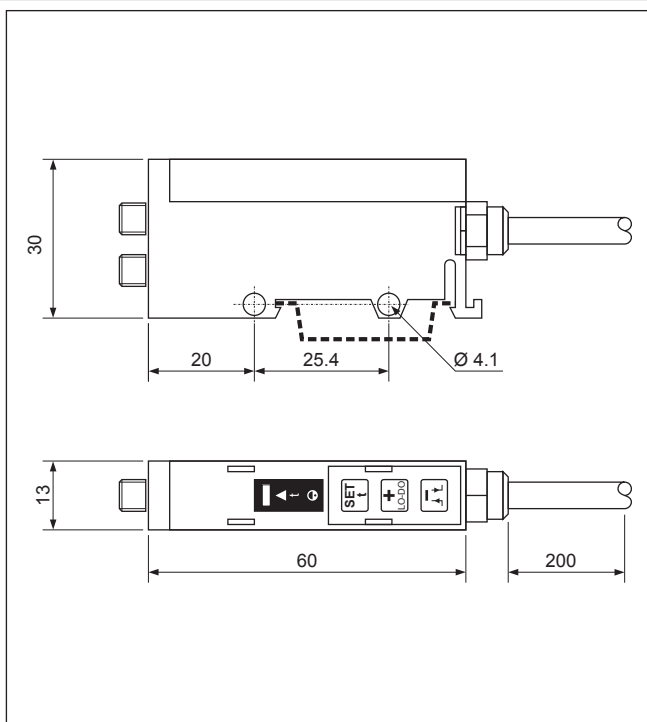
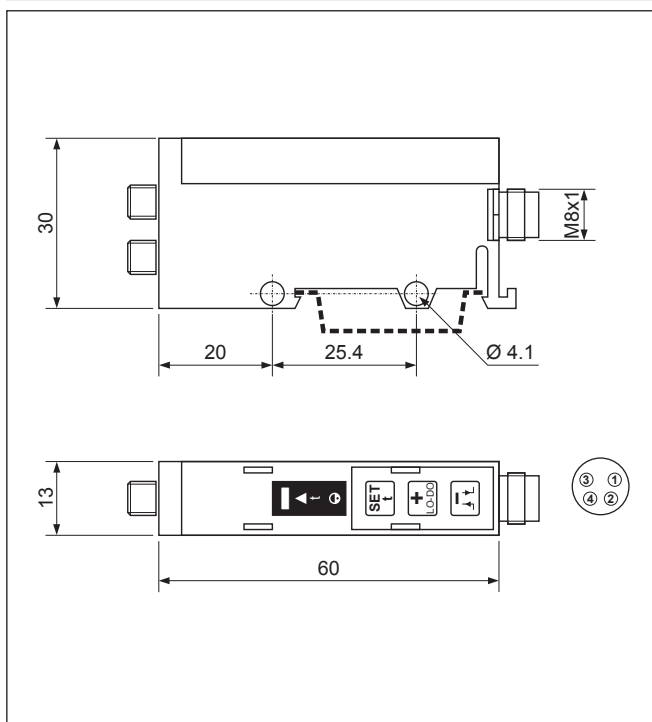
Make (NO) Output ON

ON Delay (NO-output)

OFF Delay (NO-output)



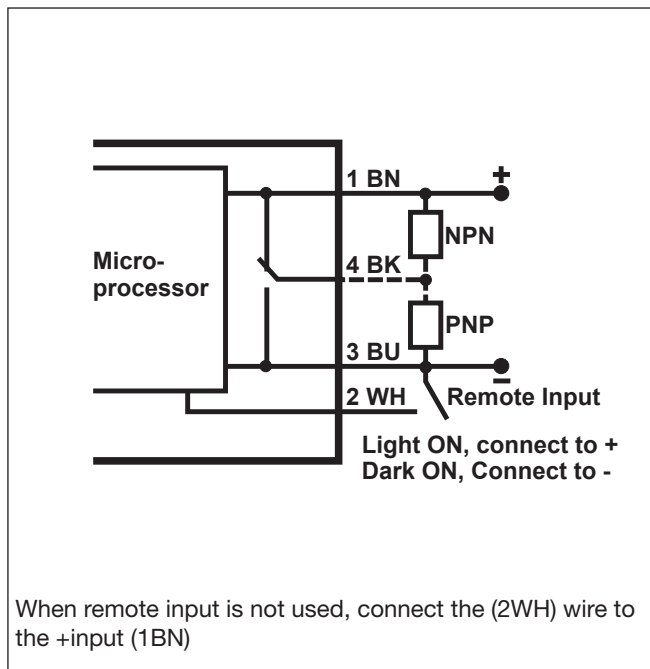
Dimensions



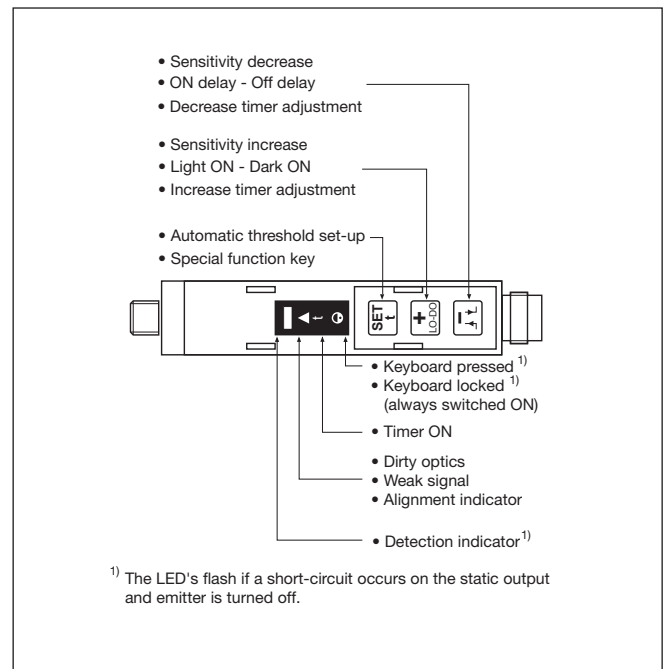
Programming Functions

Keyboard		Timing functions	
Unlock	Press & for 4 sec. and the indicator turn OFF	ON delay	Press for 4 sec.
Lock	Press & for 4 sec. and the indicator turn ON	Set timer (timer ON)	Until the flashes
Self-Teach operation		Increase time (500 mS/step)	Press N times
Coarse set-up mode	Press one time	Decrease time (500mS/step)	Press N times
Fine set-up mode (Similar to Remote Input)	Press two times	ON or OFF delay (toggle)	Press for 4 sec.
Sensitivity adjustment		Reset timer (timer OFF)	Press once
To increase	Press N time	Exit timer setting	Press for 4 sec.
To decrease	Press N times	Alignment help	
Light or dark operation		Enter alignment help	Press for 4 sec.
Change the output function	Press for 4 sec.	Until the flashes Three frequencies proportional to the signal strength	
		Exit alignment help	Press for 4 sec.

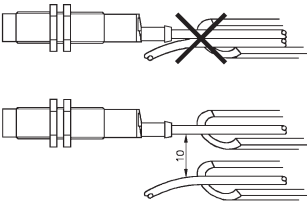
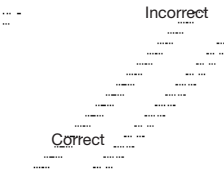
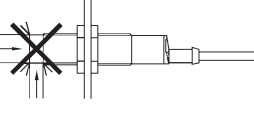
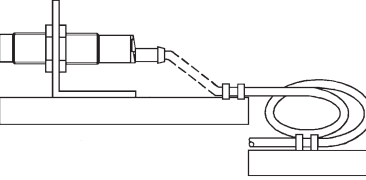
Wiring Diagram



Keyboard and LED



Installation Hints

<p>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</p> 	<p>Relief of cable strain</p>  <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p>  <p>A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier</p>  <p>Any repetitive flexing of the cable should be avoided</p>
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Delivery Contents

- Photoelectric switch: PD60CNV20BP..T
- Installation instruction
- **Packaging:** Cardboard box

Accessories

- Plastic fibres type FGD., FGT..
- Connector type: CONG5A../CON.54NF